IN THE CLAIMS:

Please cancel claims 1-25 without prejudice as follows:

1-25. (Cancelled)

Please add new claims 26-45 as follows:

26. (New) A method for depositing a barrier layer on a substrate, comprising:

introducing a processing gas comprising an organosilicon compound into a processing chamber, wherein the organosilicon compound consists essentially of silicon, carbon, and hydrogen, and has a carbon atom to silicon atom ratio of 6:1 or greater; and

reacting the organosilicon compound to form a silicon carbide layer having a dielectric constant less than 4.

27. (New) The method of claim 26, wherein the substrate comprises metal features and the barrier layer is formed thereon.

28. (New) The method of claim 26, wherein the barrier layer is exposed to a plasma treatment process.

29. (New) The method of claim 26, wherein the processing gas further comprises a carrier gas selected from the group consisting of argon (Ar), helium (He), neon (Ne), xenon (Xe), nitrogen (N_2), and combinations thereof.

30. (New) The method of claim 26, wherein the processing gas further includes a dopant selected from the group consisting of an oxygen-containing compound, a nitrogen-containing compound, a boron-containing compound, a phosphorus-containing compound, and combinations thereof.

31. (New) The method of claim 26, wherein the barrier layer is deposited under plasma conditions at a chamber pressure of less than 500 Torr.

32. (New) The method of claim 26, wherein the barrier layer is deposited at a substrate temperature of less than 500°C.

33. (New) The method of claim 26, wherein organosilicon compound has a carbon atom to silicon atom ratio of 8:1.

34. (New) The method of claim 26, wherein organosilicon compound has a carbon atom to silicon atom ratio of 9:1.

35. (New) A method for processing a substrate having metal features formed therein, comprising:

depositing a barrier layer on the substrate on the metal features by introducing a processing gas comprising an organosilicon compound into a processing chamber, wherein the organosilicon compound consists essentially of silicon, carbon, and hydrogen, and has a carbon atom to silicon atom ratio of about 6:1 or greater and the barrier layer has a dielectric constant less than 5; and

depositing a first dielectric layer adjacent the barrier layer, wherein the first dielectric layer comprises silicon, oxygen, and carbon and has a dielectric constant of about 3 or less.

36. (New) The method of claim 35, further comprising depositing a silicon carbide etch stop on the first dielectric layer.

37. (New) The method of claim 36, wherein the silicon carbide etch stop is depositing by reacting an organosilicon compound consists essentially of silicon, carbon, and hydrogen, and has a carbon atom to silicon atom ratio of about 6:1 or greater.

38. (New) The method of claim 36, further comprising depositing a second dielectric layer on the silicon carbide etch stop.

39. (New) The method of claim 35, wherein the deposited barrier layer is exposed a plasma treatment process.

40. (New) The method of claim 35, wherein the processing gas further comprises a carrier gas selected from the group consisting of argon (Ar), helium (He), neon (Ne), xenon (Xe), nitrogen (N_2), and combinations thereof.

41. (New) The method of claim 35, wherein the processing gas further includes a dopant selected from the group consisting of an oxygen-containing compound, a nitrogen-containing compound, a boron-containing compound, a phosphorus-containing compound, and combinations thereof.

42. (New) The method of claim 35, wherein the barrier layer is deposited under plasma conditions at a chamber pressure of less than 500 Torr.

43. (New) The method of claim 35, wherein the barrier layer is deposited at a substrate temperature of less than 500°C.

44. (New) The method of claim 35, wherein organosilicon compound has a carbon atom to silicon atom ratio of 8:1.

45. (New) The method of claim 35, wherein organosilicon compound has a carbon atom to silicon atom ratio of 9:1.